

it accords well with some of the Asiatic species, and in form approaches *Euchlora aureola* of Hope.

In concluding the species of new Lamellicorns, I add an extract of a letter lately received from Mr. Savage of Cape Palmas, respecting the Goliath Beetles. "As to *Goliathus Cacicus* these regions abound with them, and after a year's watching I have obtained the flower and know botanically the tree from which they derive their food. It is a syngenesious plant belonging to Jussieu's *Compositæ, Corymbiferae*. As a genus it appears to be undescribed, though I have not as minutely examined it as I intend to do when I have more leisure. As soon as able I shall describe and send it through you to the Linnæan Society. The *Cacicus* inhabits no other tree, as it is said. The *Mecynorhina torquata* inhabits two kinds of tree, one a magnificent *Mimosa*, a Goliath of its kind; I have not yet obtained the blossom; it is now in seed, which I have. The *G. Drurii* is not found in the locality of Cape Palmas; it has been taken at Bussa, near Montserrado, and the specimen I now send is from Cape Coast. I lately saw Professor Klug's *regius*, which is no more nor less than the female of *Drurii*. Of this I am as certain as that the *princeps* of Hope is the female of *Cacicus*. The Gold Coast would seem to be the locality of *Drurii*, and the Grain Coast that of the *Cacicus* and *torquatus*."

BIBLIOGRAPHICAL NOTICES.

A History of British Sponges and Lithophytes. By George Johnston, M.D. Lizars, Edinburgh; Highley, London: 1842.

THERE IS NO branch of natural history which has been so much neglected as that of the sponge tribe. Situate as it were in the debateable ground between the animal and the vegetable kingdoms, naturalists appear to have considered themselves justified in looking upon the sponges as scarcely worthy of notice, and it was not until Dr. Grant published, in the Edinburgh Philosophical Journal, the account of his valuable investigations of the anatomy and physiology of some of the British species, that they were determined with any degree of certainty to be members of the animal kingdom. We were then, for the first time, made acquainted with the true purposes and modes of action of the incurrent and excurrent canals which permeate their substance in every direction, and of the manner in which some of the species are propagated by the ejection of ciliated gemmules or ova from their large oscula. Dr. Grant also described several new British species, and these, in addition to what had been previously described by Montagu and others, formed the groundwork for the arrangement and brief descriptions presented to us by Dr. Fleming in his 'History of British Animals.' The whole of our

information regarding these singular creatures has hitherto been dispersed, in the form of detached papers, in the various scientific periodicals, and the present instance is the first in which their descriptions have been collected together and published in a full and explicit manner.

The author commences his work by a general view of the structure, physiology and geographical distribution of sponges in general, and proceeds at some length to review the labours of his predecessors on this subject, from the times of Aristotle and Pliny to the present period. In this part of his subject we have the various and conflicting opinions of both ancient and modern naturalists, regarding their animal or vegetable nature, examined and compared in a temperate, clear and satisfactory manner; and he concludes this able digest of the labours of his predecessors with quoting the observation of Professor Owen, "that if a line could be drawn between the animal and vegetable kingdoms, the sponges would be placed upon the vegetable side of the line." But, our author observes, "We shall possibly however arrive at an opposite conclusion, if, proceeding in our inquiry, we follow the siliceous species insensibly gliding on the one hand into the fibro-corneous sponge, filled with its mucilaginous fleshy slime, and on the other into the fleshy *Tethya*, in whose oscula the first signs of an obscure irritability show themselves. Sponges therefore appear to be true Zoophytes; and it imparts additional interest to their study to consider them, as they probably are, the first matrix and cradle of organic life, and exhibiting before us the lowest organizations compatible with its existence."

In the chapter on "the discoverers of the British species," we have a clear and concise account of the progress of their discovery, by which it appears that forty species were described by Dr. Fleming in his 'History of British Animals.' Our author however describes fifty-six, being an increase of sixteen new species since the publication of Dr. Fleming's work.

The systematic arrangement adopted is that of Dr. Fleming, with some alterations and additions, and these have been carefully and judiciously made. The author has again separated *Spongilla* from *Halichondria*, and by this alteration, and by the adoption of new genera, has increased the number from four, as described by Dr. Fleming, to nine.

The species have been described with much care, and additional specific characters have been introduced where it has been found necessary; and the author has given a list of the synonyms to each, so full and complete, as to render this portion of the work exceedingly valuable. There are also extensive lists of habitats; and the latest information on the anatomy, physiology and habits of the various species treated of, and of the sponge tribe in general, has been zealously collected and introduced up to the very latest period.

The second part of the work, 'The British Lithophytes,' may be considered in the light of a supplement to his 'History of the British Zoophytes,' although the author by no means seems to consider them as such. In the introduction to the subject he says, "The corallines

are marine productions, which grow in profusion on rocks, shells, and, more rarely, on sea-weeds, to which they are rooted by means of a spreading calcareous crust; and they rise up to the height of a few inches, at most, in lichenoid or conferva-like tufts, dividing and subdividing from the base into numerous branches and branchlets, having the same structure and appearance as the primary shoots. They are remarkably distinguished from other Algæ by being covered with a calcareous crust, which is jointed at short and regular intervals, and conceals a central axis of a decidedly vegetable nature." In this conclusion we cannot agree to the full extent with the author. Ellis, in his 'History of British Corallines,' and other authors of long standing and high merit, have all concurred in considering these curious bodies as Zoophytes, and this decision has been adopted by almost every botanist up to the present period. The subject of their true nature, in the scale of organized beings, is one of exceeding interest, and one which is admirably calculated to afford employment to the high powers and improved microscopes of the present day; and until they have undergone a careful examination by such means, we may be content to consider their present situation to be in the neutral ground, between the animal and vegetable kingdoms.

In this part of the work the author describes four species of Nulipora and one of Corallina more than we have had enumerated by preceding writers; and we find, as in the first part of the work, the species fully and carefully described, with copious lists of synonyms. In conclusion, the author has furnished a Latin 'Synopsis Spongiarum et Lithophytorum,' which is calculated to be of much service to the student.

The work is illustrated by twenty-five copper-plates, containing numerous figures, and twenty-three wood-cuts incorporated with the letter-press.

This volume, like its predecessor, 'The History of the British Zoophytes,' by the same talented author, is admirably calculated for a sea-side companion, and we can promise its readers that they will reap a rich harvest of pleasure and instruction through its means, in the study of the curious organisms of which it treats. The author has rendered a valuable service to science by its production, and we trust that this excellent addition to the natural history of our country will meet with the patronage it so well merits, and that the volume will find a place in the library of every naturalist in the kingdom.

V.

Plantæ Novæ vel minus notæ, opusculis diversis olim descriptæ, generibus quibusdam speciebusque novis adjectis iterum recognitæ. Auctore Philippo Parlatore, M.D., Univers. Panormitanæ Professore, &c. 8vo, pp. 88. Paris, 1842. Gide.

By the kindness of its esteemed author we have just received this valuable tract, which contains the descriptive portions of several memoirs scattered in the journals of Italy, and now collected into one book for the purpose of being distributed amongst his botanical

friends. Three new genera are described, viz. MAILLEA, to receive the *Phalaris crypsoides* of D'Urville and Kunth; AVELLINA, founded upon the *Bromus Michellii* of Savi, which has been considered as a *Festuca* by Kunth and Bertoloni, a *Kæleria* by DeCandolle, an *Avena* by Gussone, *Trisetum* by Trinius and Tenore, and a *Vulpia* by Reichenbach; and SERRAFALCUS, intended to include the *Bromi secalini* of Bertoloni and Koch, the *B. genuini* and *B. festucacei* of those authors being retained as the genus *Bromus*. As it is a point of considerable interest to English botanists, it may be as well to point out the difference between the proposed new genus and *Bromus*, namely, *Bromus*, lower glume 1-nerved, upper 3—5-nerved; florets lanceolate, compressed; spikelets broader upwards;—*Serrafalcus* (Parl.), lower glume 3—5-nerved, upper 7—9-nerved; florets oblong, turgid; spikelets narrower upwards. As these characters are founded upon differences of considerable value in this natural order, and the group thus formed is a very natural one, it is probable that the genus ought to be adopted, in which case the following British *Bromi* will become species of *Serrafalcus*, viz. *mollis* (including *racemosus*), *commutatus*, *secalinus*, *velutinus* (probably a variety of the preceding), *arvensis* (a very doubtful native), and *squarrosus*. It would take far more space than we can afford to record all the new species here described, and we will only take the liberty in conclusion of expressing a hope, that other botanists who publish their observations in journals which rarely pass the boundaries of the countries in which they are published, will follow the excellent example that has now been set by Prof. Parlatore.

Journals of two Expeditions of Discovery in North-west and Western Australia. By George Grey, Esq., Governor of South Australia. 2 vols. 8vo. London, 1841.

We wish to call the attention of our zoological readers to the Appendix to this highly interesting work, which contains the following articles:—

C. Contributions towards the geographical distribution of the *Mammalia* of Australia, with notes on some recently discovered species; by J. E. Gray, F.R.S., &c.

This contains, 1st, a valuable table of all the species discovered on the Australian continent or its adjacent islands, pointing out their respective localities, and containing 96 species; 2ndly, a description of 12 new species.

D. A List of the *Birds* of the Western Coast; by John Gould, F.L.S.

E. A Catalogue of the *Reptiles* and *Amphibia* hitherto described as inhabiting Australia, with a description of some new species from Western Australia, and some remarks on their geographical distribution; by J. E. Gray, F.R.S., &c.

This contains, 1st, a list of 107 species, with their localities; 2nd, observations on the more obscure and hitherto unknown genera and species, with figures of the following, viz. *Ronia catenulata*, *Aprasia pulchella*, *Delma Fraseri*, *Moloch horridus*, *Elaps Gouldii*, *E. coronatus*, *Calamaria Diadema*, *Liatris Burtonii*, *Soridia lineata*, *Hy-*

draspis australis, *Chelodina oblonga*, *Hyla biocellata*, *H. Adelaidensis*, *Breviceps Heliogabali* (called *B. Gouldii* in the text), *Helioporus alboguttatus*.

F. Notes on some *Insects* from King George's Sound, collected and presented to the British Museum by Capt. G. Grey, by A. White, Esq.

This contains, 1st, a notice of previous publications on Australian Insects; 2nd, a list with detailed observations upon the *Coleoptera*, *Orthoptera*, *Hymenoptera*, *Neuroptera*, *Hemiptera* and *Lepidoptera*, and 11 beautiful woodcuts of new or interesting species.

In addition to this Appendix, the whole of chapter 7 of vol. ii. is occupied with Capt. Grey's own observations on natural history, and is illustrated by several figures.

*Wiegmann's Archiv für Naturgeschichte**. Parts II.—V. for 1841. Berlin, 1841—42.

In our former notice of this excellent journal (vol. viii. p. 47) we promised to bring its contents regularly under review; from our long silence it may have seemed that we had neglected it; this has however been occasioned by the delay and irregularity in the publication of the work, owing to the long illness and lamented decease of its late editor. Within the last few weeks three parts have been issued, two of them for last year, and the first part for the present; probably by this time Part VI., completing the volume for 1841, as well as Parts II. and III. for 1842, will have been published, though they have not yet reached us. We are now able, on the authority of our friend Prof. Erichson, to assure the subscribers to the work in this country, that it will henceforward make its appearance regularly. The contents of the four parts before us are as follows:—

On the genera and species of Comatulæ, by J. Müller, p. 139—148. This paper was read before the Royal Academy of Sciences of Berlin on May 13, 1841. The author refers to a paper previously communicated, in which he had divided the non-petiolated Crinoidea into three families;—*Articulata* with the genera *Comatula*, Lam., and *Comaster*, Agass.; *Costata* with shaly ribbed calyx and pinnulæ opposite, differing from the pinnulæ of all other Crinoidea, gen. *Saccocoma*, Agass.; and *Tessellata*, gen. *Marsupites*; and he then proceeds to the description of his new genus *Actinometra* founded on the *Comatula solaris*, Mus. Vienn., one of the most gigantic forms of recent *Comatulæ*; it has no trace of grooves proceeding to the centre of the disc, the ventral side of which is occupied by a tube. The arms are furnished with grooves, which terminate however equidistant, in a circular groove encircling the margin of the disc. In all the rest it resembles the *Comatulæ*. Its specific name is *imperialis*. Size 2 feet. Of true *Comatulæ* the author admits only 24 recent species, among which are 12 with 10 arms.

Genus *Alecto*, Leach, *Comatula*, Lam.

* Species with 10 arms, or simple division of the rays.

Alecto carinata, Leach (*Comatula carinata*, Lam., Griffith, An.

* Conducted by Prof. W. F. Erichson.

Kingd. Zoophytes, pl. 8.).—*Al. europæa*, Leach (Com. mediteranea, *Lam.*, *Heusinger Zeitschrift f. Physik*, iii. tab. 10, 11.).—*Al. Adeonæ*, Müll. (Com. Adonæ, *Lam.*, *Blainv. Actinol.*, tab. xxvi.).—*Al. solaris*, Müll. (Com. solaris, *Lam.*).—*Al. brachiolata*, Müll. (Com. brachiolata, *Lam.*).—*Al. Milleri*, Müll. (Com. fimbriata, *Mill.*) has never again been observed.

The following new species with 10 arms are then described:—*Alecto phalangium*, from Nice; *Al. Eschrichtii*, from Greenland; *Al. echinoptera*, locality?; *Al. rosea*, locality unknown; *Al. tessellata*, India; and *Al. polyarthra*.

** Species with greater division of rays.

Alecto rotalaria (Com. rotalaria, *Lam.*), with 20—22 arms; *Al. fimbriata* (Com. fimbriata, *Lam.*), with 20 arms; *Al. multifida* (Com. multiradiata, *Lam.*), with 44 arms; *Al. Savignii* (*Description d'Egypte, Echinodermes*, pl. 1. f. 1.), with 20 arms; and as new: *Al. palmata* (? Caput medusæ cinereum, *Linck*, tab. 22, No. 33.), about 35 arms, India; *Al. parvicirra*, 27 arms, locality?; *Al. timorensis*, 36—40 arms, from Timor; *Al. japonica*, 27 arms, Japan; *Al. flagellata*, 38 arms, locality?; *Al. Novæ Guineæ*, 56 arms; *Al. elongata*, 20 arms, New Guinea; *Al. Bennetti*, above 70 arms, locality?.

The madreporal plate is wanting in the *Comatulæ*, and seems to be generally absent in the Crinoidea. Prof. Müller considers the madreporal plate on *Comatula Adeonæ* figured and described by Delle Chiaje to be the *Epizoon* of the *Comatulæ* first noticed by Thompson—a discoid animal with fringed margin. It has anteriorly a snout proceeding from the ventral side, a ramified intestinal canal, and 10 rudiments of feet provided with three long hooks on the ventral side, *Cyclocirra Thompsoni*, Müll. It is frequently met with affixed to the disc and arms of *Alecto europæa*. It differs very considerably from the parasitic worms by its rapid motion without any contraction of the body, and is therefore more related to the Crustacea, among which however there is no form similar to it. In some measure it appears allied to *Arctison*, which have not the least relationship to the Rotatoria.

I have frequently had occasion, says the author, to examine *Comatulæ* in a live state, and have found the fact to be confirmed, that the cirrhi of the central head are without all motion, as was evident from the anatomy. The arms have a lively motion during swimming, five of the ten arms move alternately at the same time, so that one between each two is in a state of rest. The separation of the sexes was also proved by the presence of Spermatozoa in the male and ova in female individuals in the protuberances of the pinnulæ.

On the organs of hearing in *Mollusca*, by Prof. C. Th. von Siebold, p. 148—168, with a plate. In this interesting paper the author first describes the auditory organs as hitherto observed in the lower tribes, e. g. the Cephalopods, and then proceeds to a description of the central system of nerves of the Gasteropods, the knowledge of which is requisite for discovering these organs, they being situated in all Gasteropods on the hinder extremity of the two large front ganglionic protuberances. They must always be sought for near the front pair of ganglions of this portion of the nerves, where they are more easily

detected on the under than on the upper surface, especially in those Gasteropods (*Limax*, *Helix*) whose pairs of ganglions of the lower portion of nerves are more confluent (*verschmolzen*). They have been found on all species hitherto examined, as *Helix pomatia*, *arbustorum*, *nemoralis*, *hortensis*, *rotundata* and *hispida*, *Succinea amphibia*, *Lymnæus stagnalis* and *minutus*, *Physa fontinalis*, *Planorbis marginatus*, *vortex*, *nitidus* and *contortus*, *Clausilia plicata*, *nervosa* and *minima*, *Ancylus fluviatilis*, *Bulimus lubricus*, *Limax agrestis* and *maximus*, and *Arion empiricorum*. The organs of hearing are always present in pairs, and are formed of two capsules having transparent walls. These capsules may even be detected with the naked eye in the larger species on pressing the ganglion of the brain between plates of glass. Both capsules are situated on the posterior vaulting of the anterior pair of ganglia of the lower central portion of nerves so closely, that where they join the ganglionic mass it is difficult to detect the limits between the ganglion and the wall of the capsule, especially as they nearly agree in colour. In the cavities of these two capsules are inclosed an immense number of transparent crystalline bodies, consisting of carbonate of lime. The form of these otolithes, for as such they must be considered, is oval and flat, their borders seem to be gently rounded off. They oscillate so lively in the capsules as almost to lead to the belief they were jerked one among the other by a vibrating ciliatle epithelium clothing the inner wall of the capsule, but never could a trace of cilia be detected. In a note the author expresses his belief that the Annelides are also furnished with similar organs of hearing, judging from the description which Stan-
nius has given in his anatomy of *Arenicola piscatorum* of bodies resembling otolithes, which likewise occur in closed capsules.

On the Balanidea, by Prof. W. v. Rapp, p. 168—174. The shells of the non-petiolated Cirrhipoda (*Balanidea*) differ from the shells of Mollusca and of the petiolated Cirrhipoda (*Lepadæa*) by their peculiar internal structure. The genera *Balanus*, *Coronula*, *Tubicinella* all agree in this respect, viz. in their shells being perforated by regular canals. The structure of these canals, as well as of the animal, is described at length in *Tubicinella balanarum*, *Coronula diadema*, *C. balanaris*, *Balanus spinosus*, and other species of this last genus. Speaking of the young of *Tubicinella balanarum*, the author observes that he found here what Thompson and Burmeister had shown to exist in other Cirripedes, a form totally differing from that of the adult; he could detect no eyes, nor a trace of shell. It is not to be admitted that the *Tubicinella* derives its nutriment from the whale, but most probably from the flocks of *Cyamus*, with which the bodies of the latter are infested. The animal of the non-petiolated Cirrhipoda differs essentially from those of the petiolated by the branchiæ; these organs are narrow pointed laminæ in the *Lepadæa*, while in the *Balanidea* a large branchia is situated on each side of the animal, formed of a membrane folded in nearly regular laminæ, as already observed by Cuvier and Hunter.*

W. FRANCIS.

* Want of space compels us to leave the remainder over for next month.
—ED.